



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/516,905

06/30/2005

Peter C. Brazier

9236A

2409

25280

7590

01/30/2008

Legal Department (M-495)

P.O. Box 1926

Spartanburg, SC 29304

EXAMINER

TOLIN, MICHAEL A

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

01/30/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/516,905	<b>Applicant(s)</b> BRAZIER ET AL.	
	<b>Examiner</b> Michael A. Tolin	<b>Art Unit</b> 1791	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 November 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 32-36,39-41,43-46,48-52,54,55,57,59-63,65-69,71 and 72 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 32-36,39-41,43-46,48-52,54,55,57,59-63,65-69,71 and 72 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>See Continuation Sheet</u>             |

Continuation of Attachment(s) 6). Other: machine translation of WO 96/22413.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 39 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 32-36, 39-41, 43, 46, 48-52, 54, 55, 57, 59-63, and 65-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crenshaw (WO 03/014462 A1) in view of Vorel (WO 96/22413, machine translation attached), Allen (US 3801421), Newbould (EP 0367441 A2), Ashton (US 5057175), and Pourmand (US 6342115).

Crenshaw teaches a method of making a floor mat with a tufted pile textile surface and an elastomer backing (Abstract; paragraphs 2, 3, and 8). Crenshaw teaches mixing elastomer crumbs and binder, depositing the crumb/binder mixture on a conveyor, placing the claimed tufted textile surface element on the crumb/binder layer,

and pressing in a heated press at temperatures within the claimed range in order to activate the adhesive and bond the textile to the elastomer backing (paragraphs 7, 16, 18, 23 and 46-55).

Crenshaw differs from the claims in that:

- i. Crenshaw does not teach pressing at a pressure within the claimed range in order to provide voids between the elastomer crumbs and to provide the elastomer backing with a density which is within the claimed range.
  - ii. Crenshaw does not teach the claimed structure of the heated press having an inflatable diaphragm and a single heated platen having a plurality of zones including a low temperature zone and a high temperature zone.
- i. Crenshaw does teach pressures as low as approximately 5 psi, and is not particularly limited to a specific pressure (paragraph 51). Vorel teaches that pressing a crumb/binder layer at a pressure of 3-30 psi (20-200 kPa) provides a floor mat in which there are voids between the granular material to provide a water permeable mat (Abstract; machine translation, page 1). As to the claimed upper limit of 8 psi, in view of the range taught by Vorel one of ordinary skill in the art would have been expected to engage in routine experimentation in order to optimize the pressure for obtaining the desired strength and porosity of the elastomer backing. It would have been obvious to one of ordinary skill in the art at the time of the invention to press at pressures within the claimed range in order to provide the claimed voids because one of ordinary skill in the art would have been motivated to provide a water permeable floor mat in accordance with the teachings of Vorel.

As to the claimed density, the primary reference to Crenshaw, like Applicant, uses rubber crumb (paragraphs 16-18). Applicant explains that the degree of compression of the elastomer backing is related to the pressure applied (Applicant's specification, page 4, lines 15-17). Thus it appears the claimed density is inherent in the applied pressure suggested by Vorel. To the extent that the claimed density is not inherent in the modified method of Crenshaw, densities within the claimed range are generally known for water permeable void containing rubber crumb layers, as evidenced by Allen (column 6, lines 18-23; column 9, line 5). It would have been obvious to one of ordinary skill in the art at the time the invention to form an elastomer backing with a density within the claimed range because one of ordinary skill in the art would have been motivated to provide a known suitable density for a water permeable porous rubber crumb backing layer, as evidenced by Allen.

ii. It is known to use a press having an inflatable diaphragm which applies pressure against a heated platen in order to bond a carpet or mat textile to a rubber backing, as evidenced by Newbould (Abstract; column 1, lines 1-2 and lines 52-55; column 2, lines 1-3 and lines 29-38; column 3, lines 3-8; Figures 1 and 2). While the heated platen of Newbould appears to operate at a single temperature, it is generally known to improve such a pressing platen by providing it with multiple temperature zones in order to achieve a carefully controlled temperature profile along the platen, as evidenced by Ashton (Abstract; Figures 2A and 2B; column 6, lines 57-68; column 7, lines 1-14). Further, it is clear that an active cooling step is desirable in the art of forming rubber backed floor mats since Vorel teaches a cooling section 14 after heating (Figure 2;

machine translation, page 2). Pourmand is cited to provide additional evidence for improving the platen of Newbould in the manner suggested by Ashton. Pourmand explains that in textile lamination equipment it is desirable to provide multiple heating and cooling pressure zones in order to accurately vary the temperature (column 1; column 2, lines 1-12). It would have been obvious to one of ordinary skill in the art to provide the claimed heated press because one of ordinary skill in the art would have been motivated to use a known and suitable apparatus for providing heat and pressure in the formation of a floor mat such as that of Newbould, and one of ordinary skill in the art would have been motivated to provide such apparatus with improved temperature control in accordance with the teachings of Ashton, Pourmand, and Vorel as set forth above. It is noted that the claimed low temperature zone does not require cooling, but rather merely requires a temperature which is lower than the temperature in a second zone.

Regarding claims 33 and 34, the degree of compression is directly related to the density. As the degree of compression is increased, the density also increases. Thus the claimed thickness percentage naturally follows from the claimed density range, which has been satisfied as set forth above. Accordingly, one of ordinary skill in the art performing routine experimentation to optimize the pressure for achieving the desired porosity and density as set forth above would inherently provide a compressed thickness within the claimed range.

Regarding claims 35 and 36, Crenshaw teaches activation at temperatures as low as 100°C (paragraph 23) and explains that the temperature should be chosen to

prevent overheating the binder and to account for molding pressure, relative humidity, product performance, cost, and type of textile material used (paragraph 50).

Accordingly, selecting maximum temperatures within the claimed range involves no more than routine experimentation to account for the above noted factors set forth by Crenshaw. It would have been obvious to one of ordinary skill in the art at the time of the invention to heat at temperatures within the claimed range because one of ordinary skill in the art would have been motivated to account for the above noted factors as a matter of routine experimentation.

The limitation of claim 39 has been clearly satisfied as set forth above.

Regarding claim 40, Crenshaw's preferred binder is an isocyanate binder such as an MDI binder (paragraph 20). Such binders are conventionally thermosetting.

Regarding claim 41, Crenshaw is not particularly limited to a specific type of adhesive. Accordingly one of ordinary skill in the art would have been motivated to use any known and suitable adhesive. Suitable thermoplastic, hotmelt, solvent-free polyurethane, one and two component polyurethane MDI thermosetting binders are well known. Further, it is generally well known that thermoplastic, hotmelt and solvent-free adhesives are desirable for providing reduced toxicity in the manufacturing process, improved ability to recycle bonded articles, and strong bonding immediately upon cooling after thermal activation, while thermosetting binders provide high temperature resistance and excellent durability. Selection from among known suitable adhesives involves no more than expected and routine experimentation to achieve the above noted well known factors.



Regarding claim 43, this limitation is clearly taught by Newbould (columns 2 and 3).

Regarding claims 46 and 48, Vorel suggests both of these methods as suitable for forming a floor mat (Figures 1 and 2; machine translation, page 2). Newbould suggest the method of claim 48 (columns 1 and 2). Further, both methods are generally well known in the art of forming rubber backed textiles. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the textile material in the manner of claim 46 or claim 48 because one of ordinary skill in the art would have been motivated to provide the textile material in any well known and suitable manner, as evidenced by Vorel and/or Newbold as set forth above.

Crenshaw clearly teaches the limitations of claims 49 and 50 (paragraphs 16 and 58).

The limitations of claims 51, 52, 54, and 55 have been satisfied for the reasons set forth above with regard to routine experimentation to achieve the desired voids and density within the claimed range in the backing layer.

Regarding claim 57, Crenshaw teaches a particle size of 5-20 mesh (0.8-4 mm) and thus clearly implies a backing thickness of at least 1 mm (paragraph 18). Further, thicknesses of greater than 1 mm are conventional in the art of rubber backed floor mats for the motivation of providing suitable strength and durability.

Regarding claim 59, as noted above Crenshaw teaches choosing particle sizes of about 1-4 mm depending on the application and thus appears to suggest selecting particles which are substantially within the claimed range.

Regarding claim 60, the specification defines powdered crumb is that having a maximum dimension of 2 mm (page 3, lines 13-20). Crenshaw suggests, in one embodiment, using particles of 2 mm (10 mesh) more or less (paragraph 18), and thus clearly satisfies this limitation. Further, Vorel explains that 0.5 to 5 mm particles are suitable for manufacturing the porous elastomer backing (machine translation, pages 1 and 2).

Regarding claims 59 and 61, Allen provides additional evidence that selection of particle sizes in the claimed range involves no more than routine experimentation to optimize for known properties. In particular, Allen explains that the larger the particles, the greater the permeability (column 5, line 7-11). Thus, in view of Allen one of ordinary skill in the art would have been motivated to minimize the powder sized particles and use particles at the higher end of the 1-4 mm range suggested by Crenshaw, thus satisfying the limitations of claims 59 and 61. It would have been obvious to one of ordinary skill in the art at the time of the invention to avoid the use of powder sized particles and use larger particles in the range suggested by Crenshaw because one of ordinary skill in the art would have been motivated to maximize permeability in accordance with the teachings of Allen.

Regarding claim 62 and 63, Crenshaw clearly suggests binder contents within the claimed range (paragraph 32-33). Furthermore, determination of a suitable amount of binder to provide the desired strength without using excessive binder and thereby increasing costs involves no more than expected and routine experimentation. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a

binder content within the claimed range because one of ordinary skill in the art would have been motivated to provide sufficient strength without using excessive binder as a matter of routine experimentation.

The limitations of claims 65-68 have been satisfied as set forth above with respect to the use of well known suitable adhesives having known advantages.

Regarding claim 69, Crenshaw clearly teaches the use of pigments (paragraph 30).

4. Claims 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crenshaw in view of Vorel, Allen, Newbould, Ashton, and Pourmand as applied to claims 32-36, 39-41, 43, 46, 48-52, 54, 55, 57, 59-63, and 65-69 above, and further in view of Hutter (US 3005230).

Regarding claim 44, providing a spreader device that moves at constant speed relative to an indexed conveyor is generally well known for the purpose of providing maximum throughput while allowing for uniform distribution of the particulate matter, as evidenced by Hutter (columns 1 and 2; Figure). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the claimed spreader device because one of ordinary skill in the art would have been motivated to achieve the above noted benefits in accordance with Hutter.

Regarding claim 45, doctor blades are conventional in the art of spreading material uniformly onto a conveyor or conveyed substrate, and vibrating doctor blades are well known to have the advantage of a self-cleaning property. It would have been

obvious to one of ordinary skill in the art at the time of the invention to use the claimed vibrating doctor blade because one of ordinary skill in the art would have been motivated to provide a uniform and self-cleaning spreading means in accordance with well known methods.

5. Claims 48, 49, 71 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crenshaw in view of Vorel, Allen, Newbould, Ashton, and Pourmand as applied to claims 32-36, 39-41, 43, 46, 48-52, 54, 55, 57, 59-63, and 65-69 above, and further in view of Kerr (US 5932317)

It is generally known to provide the rubber backing of a floor mat with edge strips which are inserted on a rubber backing prior to placement of the textile surface layer in a process which uses an inflatable diaphragm press in order to provide the floor mat with reinforced edges, as evidenced by Kerr (column 1, lines 1-8 and lines 40-45; column 2, lines 59-68; column 3, lines 19-25; column 4, lines 1-5). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the limitations of claims 71 and 72 because one of ordinary skill in the art would have been motivated to provide edge strips for reinforcement in accordance with the teachings of Kerr.

Claims 48 and 49 are rejected here in the alternative because Kerr also provides additional evidence that it is known to place separate textile surface elements on a rubber backing in a process which uses an inflatable diaphragm pressing apparatus and to provide the borders of claim 49 (Figures 1, 4, and 7).

***Response to Arguments***

6. The rejections under 35 USC 112 2<sup>nd</sup> paragraph have been withdrawn in view of Applicant's amendments discussed on page 11 of the response filed 16 November 2007.

7. Applicant's amendment to claim 32 inserted new language requiring a single heated platen having a high temperature zone and a low temperature zone. This new language was not previously claimed. Accordingly, a further search was conducted and new grounds of rejection have been applied which were necessitated by this amendment. The arguments directed to failure of the previous references of record to teach or suggest this new language are moot in view of the new grounds of rejection.

8. Applicant argues that one would not replace the upper platen of Crenshaw with an inflatable diaphragm. This argument is unpersuasive because the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In view of Newbould's inflatable diaphragm press for rubber backed floor mats, one of

ordinary skill would have readily appreciated that such presses are suitable for achieving the heat and pressure required in the modified method of Crenshaw for making a rubber backed floor mat.

9. Applicant's arguments with respect to Katoh, Messina, Hudkins, Desai, Wing, and DeMott are moot in view of the new grounds of rejection. These references have not been applied in the new rejections.

### ***Conclusion***

10. As noted above in the Response to Arguments, Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Tolin whose telephone number is 571-272-8633. The examiner can normally be reached on M-F 9am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Michael A. Tolin



**RICHARD CRISPINO**  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700